

# Marine Department

## Opening of Drydock and Ship Repairing Plant at Prince Rupert.

Announcement of the opening of the Grand Trunk Pacific Ry.'s drydock and ship repairing plant at Prince Rupert, B.C., was made in Canadian Railway and Marine World for November. The selection and survey of the site was made in 1910 and the actual work of construction was commenced early in 1912. A full description of the whole plant, with details and plans, was given in Canadian Railway and Marine World for Feb., 1912, but the following general particulars may be of interest now:—

The dock is in three units, with a total lifting capacity of 20,000 tons. All the units are interchangeable, and each is complete in itself, with pumps and air compressors. The two end sections are each of 5,000 tons capacity, and the middle section of 10,000

truss secured to the pile platform in such a way that it is free to rise and fall with the tide, and when being raised or lowered with the ship. The location of these attachments is such that when it is desired to use the dock in separate sections the bow section may be detached and moved around the pier work located along side the platform and secured in the same manner as provided in the original position. To make the other two sections available as separate docks it is only necessary to detach the middle section comprising six pontoons from the pier work and advance it the length of the detached section, when the sliding clamps upon the wings will coincide with those used for the previous section when the dock was operated as a whole. This will allow ample

The boiler and blacksmith shop is 76 x 150 ft., the central part being 33 ft. wide, provided with a 15-ton travelling crane. The machine shop is of similar design.

### Canadian Northern Railway Car Ferry for British Columbia.

The Canadian Northern Pacific Ry. has given a contract to Geo. Davie & Sons, Levis, Que., to build a car ferry steamship to run between Steveston and Patricia Bay, B.C., about 40 miles. Steveston is at the mouth of the Fraser River, on the southwest corner of Lulu Island, due south of Vancouver, and at the terminus of the B.C. Electric Ry.'s Lulu Island line. It is about



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tons capacity. When all three are joined together the dock will be capable of raising a vessel 600 ft. long of 20,000 tons. The dock has an overall length of 604 1-3 ft. on the keel blocks, a clear width of 100 ft. and a width overall of 130 ft. The lifting power is the aggregate of 12 pontoons of timber construction, each 130 ft. long, corresponding to the width of the dock, 44 ft. wide in a direction corresponding to the length of the dock and 15 ft. deep. These pontoons are united by steel side walls or wings 38 ft. high, 15 ft. wide at the bottom and 10 ft. wide at the top, the walls being divided so that the whole structure may be used under ordinary conditions as three separate docks, one of six pontoons with an overall length of 269 ft., and two or three pontoons each, with an overall length of 164 ft. each. The machinery for pumping the dock consists of centrifugal pumps, operated by electric motors, the capacity of the equipment being sufficient to pump the entire lifting power of the dock in two hours.

The structure as a whole is secured to the shore by clamps on the dock with a vertical

space between the centre and stern sections for the overhang without interference of vessels that may be docked in them.

The pumping machinery consists of twenty-four 12 in. centrifugal pumps, one in each end of each pontoon. They operate at approximately 275 r.p.m., being driven by a vertical shaft. All pumps on each side of each section are driven through gearing and horizontal shafting by an electric motor. Thus for the two smaller sections of three pontoons each there are four 100 h.p. motors, and for the larger section of six pontoons there are two 200 h.p. motors. These motors are alternating current, 3 phase, 25 cycle, 550 volt, with wound rotors and slip rings for variable speed control. The armature shaft is extended at both ends and operates the distribution shafts through reduction gearing at approximately 275 r.p.m.

The power house has all the boilers and power plant required for the supply of all the electric current for the drydock and shop equipment, all under one roof, covering an area of 15,392 sq. ft.

15 miles from New Westminster Bridge, from which point the C.N.R. is building a branch line to Steveston, which is about half finished. Patricia Bay is on the east coast of the Saanich Peninsula, of Vancouver Island, and another C.N.R. branch is under construction from there to Victoria, so that with the car ferry in operation the C.N.R. will have through service from Montreal to Victoria for both passenger and freight trains.

Plans for the car ferry have been prepared by A. Angstrom, who has been appointed Naval Architect for the C.N.R., and who will supervise the construction. While definite information is not yet available, it is said that the dimensions will be about as follows: length, 310 ft.; beam, 54 ft.; depth, 21 ft. The vessel will have three car tracks with a total capacity of 20 freight cars, and it is said that it will have double screws at each end and a speed of about 14 knots. It is expected to be ready for service next summer, and will be taken from Levis down the St. Lawrence River and through the Panama Canal.